ORDER NO. ACED9902191

Service Manual

AUTOMOTIVE CONSUMER ELECTRONICS

CQ-R121EW

High-Power Cassette Player/ Receiver

Specifications*

General

Power supply	: 12V DC (11V-16V) Test Voltage 14.4V, Negative ground
Maximum Power Output	: 30W × 4 channels (at 400Hz, Volume Control Max.)
Power Output	: 15W / channel (4Ω, 40 to 30,000 Hz, 3% THD)
Tone Action	: Bass ; ±12 dB at 100Hz Treble ; ±12 dB at 10kHz
Current Consumption	: Less than 2.5 A (tape mode, 0.5W 4-speaker)
Speaker Impedance	: 4Ω (4 - 8 Ω acceptable)

AM Radio

Frequency Range	: 531 - 1,602 kHz

FM Stereo Radio

Frequency Range	: 87.5 - 108.0 MHz
Useable Sensitivity	: 12 dBf. (1.1μV/75Ω S/N 30 dB)
50 dB Quieting Sensitivity	: 17 dBf. (1.8μV/75Ω)
Frequency Response	: 30 - 15,000Hz (±3 dB)
Alternate Channel Selectivity	: 75 dB
Stereo Separation	: 35 dB (1kHz)
Signal/Noise Ratio	: 70 dB (Mono)

Tape Player

Reproduction System	: 4 - track, 2-program stereo
Tape Speed	: 1-7/8" /sec (4.76cm/sec)
FF/REW Time	: Less than 200 sec (C-60)
Frequency Response	: 35 - 14,000Hz (±3 dB)
Wow and Flutter	: 0.12 % (WRMS)
Signal/Noise Ratio	: 52 dB

Dimensions** (W × H × D)	: 178 × 50 × 150 (mm)
Weight**	: 1.6 kg

* Specifications and the design are subject to possible modification without notice due to improvements.
** Dimensions and weight shown are approximate.
*** Above specifications comply with EIA standards.

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⚠WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the products dealt with in this service information by anyone else could result in serious injury or death.

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FEATURES

- PLL (Phase Locked Loop) Synthesized Tuning
- 1DIN Size Body with Cassette Player, AM/FM Tuner, Power AMP (30W×4)
- 18-FM , 6-AM stations preset
- Auto preset and scan function

REPLACING THE FUSE

Be sure to use a fuse of the specified rating (10A) when replacing a blown fuse. Fuses with higher capacity ratings, use of any substitute, or connection without a fuse may result in a fire hazard or damage to the unit.

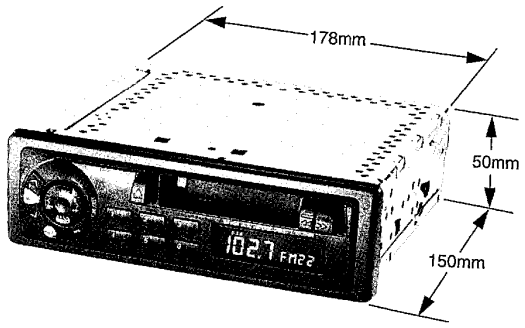
MAINTENANCE

Your product is designed and manufactured to ensure a minimum of maintenance. Use a soft cloth for routine exterior cleaning. Never use benzine, thinner or other solvent.

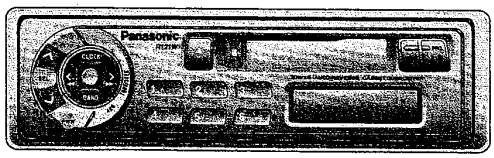
RADIO ALIGNMENT

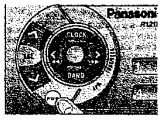
Do not align the AM/FM package blocks. When the package block is necessary, it will be supplied already aligned at the factory.

DIMENSIONS



Power and Sound Controls





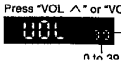
Power

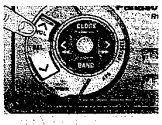
If the car is not already running, Turn the key in the ignition until the accessory indicator lights.

Press PWR to switch on the power.

Volume

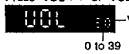
Press "VOL ∧" or "VOL ∨" to increase or decrease volume.





Volume

Press "VOL ∧" or "VOL ∨" to increase or decrease volume.



- Press "VOL ∧" or "VOL ∨" for more than 0.5 second to change numeric levels on the display rapidly.

Changing Audio Modes.

Press SEL to switch the audio mode as follows.

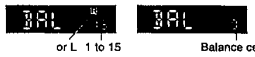
VOLUMEN ➡ BASS ➡ TREBLE
⬆ ⬇
FADER ⬅ BALANCE

Bass and Treble

Press SEL to select the BASS (TREBLE) mode. Press "VOL ∧" or "VOL ∨" to increase or decrease the bass/treble response.

Balance

Press SEL to select the BALANCE mode. Press "VOL ∧" or "VOL ∨" to shift the sound volume to the right or left speakers.

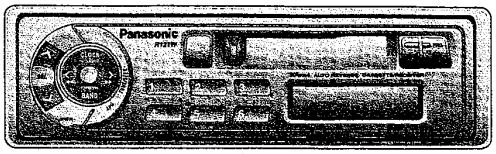


Fader

Press SEL to select the FADER mode. Press "VOL ∧" or "VOL ∨" to shift the sound volume to the front or rear speakers.

Note: when an audio mode (BAS/TRE/BAL/FAD) is selected but no operation is made with in 5 seconds (2 seconds at VOL mode), the display will return to the normal operation mode. In such a case, press SEL again to select the control mode.

Radio Basics

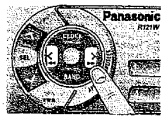


Selecting a Band

Press BAND to select the band as follows.

FM1 ➡ FM2 ➡ FM3 ➡ AM

"ST" indicator lights if the station is broadcasting in stereo.



Manual Tuning

Press "< TUNE" or "TUNE >" to move to a higher or lower frequency.

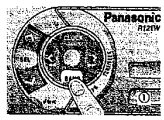
Seek Tuning

Press and hold "< TUNE" or "TUNE >" for more than 0.5 second, then release. The radio automatically stops on the next station.

Preset Station Setting

Up to 24 stations can be preset in the station memory as follows;

FM1	FM2	FM3	AM
6 stations	6 stations	6 stations	6 stations



Manual Station Preset

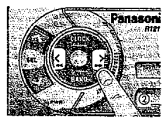
① Press BAND to select a desired band.

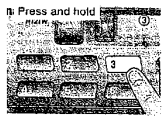
② Use manual or seek tuning to find a station that you want to program into memory.

③ Press and hold one of the station selector buttons 1 through 6 until the display blinks. The memory is now set for that button on the band you have selected.

Repeat the process to set other stations for the FM1 to AM bands.

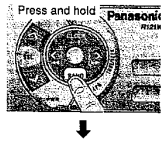
Note: You can change the memory setting by repeating the above procedure.





Tuning in a Preset Station

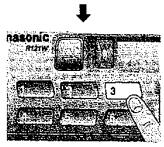
Press any of the buttons 1 through 6 to tune in the station preset by the above steps ① to ③.



Auto Preset Memory

Select a band and press and hold BAND (APM) for more than 2 seconds.

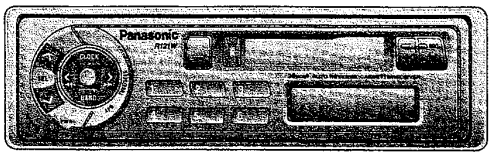
- The 6 strongest available stations will be automatically set in memory on preset buttons 1 throught 6.
- Once set, the preset stations are sequentially scanned for 5 seconds.

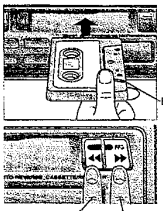


- Press the appropriate preset button for the station you want to hear.

CAUTION: For safety reasons, do not attempt to program while driving.

Cassette Tape Player Basics





Loading a Cassette

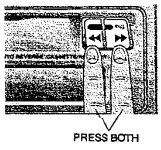
Gently insert the cassette with the exposed tape facing to the right until the mechanism captures it, and playback starts.

PROGRAM INDICATOR

Rewind and Fast Forward

- When the program indicator (▲)light, press ◀◀ to rewind or press ▶▶ to fast forward the tape.
- When the program indicator (▼)light, press ◀◀ to fast forward or press ▶▶ to rewind the tape.

To stop rewind or fast forward, gently press to button that in not in use. The tape will resume playing from that position.



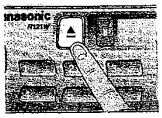
Changing Sides

Firmly press ◀◀ (REW) and ▶▶ (FF) at the same time to switch to the program on the other side of the tape.

The display changes to indicate which program is playing.

TOP SIDE PLAYING

BOTTOM SIDE PLAYING



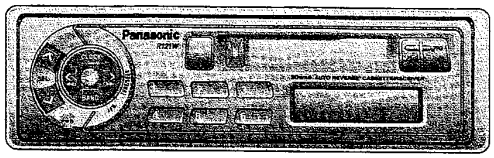
Stopping and Ejecting the Tape

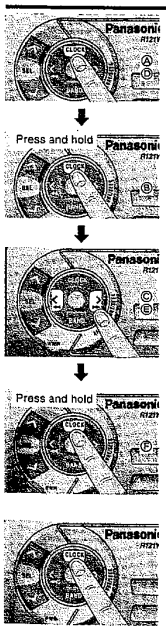
Once inserted into the unit, your tape will play continuously until you eject it. If you press and engage ▲ (EJECT), the unit clears the tape and returns to radio operation. When you shut off the car engine, the tape will stop but not eject.

Note: Always remove the cassette when you are done using the cassette player. This will prolong the life of your tape.

CAUTION: TO maintain your cassette player in top condition, avoid using tapes that are longer than 90 minutes (C-90).

Clock Basics (The clock system is 12-hours.)





Initial Time Setting

Ⓐ Press CLOCK, "AdJ" is displayed.

Ⓑ Press and hold CLOCK again for more than 2 seconds. "12" blinks indicating the time setting mode is activated.

Ⓒ To set hours, press "< TUNE" or "TUNE >"

Ⓓ Press CLOCK again for minute setting.

Ⓔ To set minutes, press "< TUNE" or "TUNE >".Hold "<" or ">" to change numbers rapidly.

Ⓕ When you have set the time, press CLOCK.

Resetting the Time

When you want to reset the time, press and hold CLOCK for more than 2 seconds to activate the time setting mode. Then, repeat step Ⓒ to Ⓕ above.

Selecting the Clock Display

Press CLOCK for clock display.
Press CLOCK once again, the current audio display mode resumes.

Installation

Preparation

- Before installation check the radio operation with antenna and speakers.
- Disconnect the cable from the negative (-) battery terminal (see caution below).
- Unit should be installed in a horizontal position with the front end up at a concenient angle, but not more than 30°.

Caution:

For installation to cars with trip or navigational computers, all electronic memory settings previously registered in the computer will be lost when the battery terminal is disconnected. For this type of car, battery could not be disconnected. Therefore, extra care should be taken to prevent short circuitting.

In-dash Installation

Installation Opening

In-dash installation can be done if the car's dashboard has an opening for this unit as shown in Fig. 1. The car's dashboard should have a thickness of 4.5mm-6mm in order to make the installation of the unit.

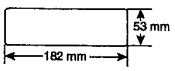


Fig.1

Installation Precautions

This equipment, if possible, should be installed by a professional installer.

In case of difficulty, please consult your nearest authorized Panasonic Service Center.

1. This system is to be used only in a 12-volt, DC battery system (car) with negative ground.
2. Follow the electrical connection on Installation Guide. Failure to do so may result in damage to the unit.
3. Connect the power lead after other connections are made.
4. Be sure to connect the YELLOW lead to the positive terminal (+) of the battery or fuse block (BAT) terminal.
5. Insulate all exposed wires to prevent short circuitting.
6. Secure all loose wires after installing the unit.
7. Please carefully read the operating and installation instructions of the respective equipment before connecting it to this unit.

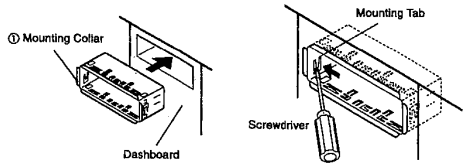
Supplied Hardwares

No.	Item	Diagrams	Qty	No.	Item	Diagrams	Qty
①	Mounting Collar		1	⑤	Mounting Bolt(5mmϕ)		1
②	Hex Nut (5mmϕ)		1	⑥	Power Connector		1
③	Rear Support Strap		1	⑦	Dismounting Plate		1
④	Tapping Screw (5mmϕT16mm)		1				

❑ Installation Procedures

1.Secure the Mounting Collar ①

Insert Mounting Collar ① into the Car's dashboard, and bend mounting tabs out with a screwdriver.



2. Secure the rear of the unit.

a) Check the electrical connection by referring to this operating instructions.

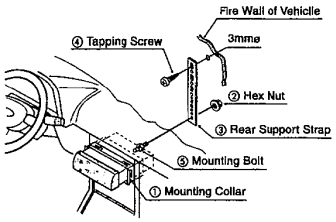
b) Connect the mounting Bolt ⑤, using a suitable wrench.

c) Insert the unit into Mounting Collar ① and push it in until "click" is heard.

d) Secure the rear of the unit to the car by either of the two recommended methods.

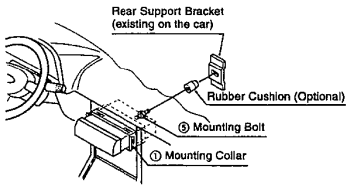
■ Using the Rear Support Strap ③

Affix one end of the Rear Support Strap ③ to the rear of the unit, and the other end to the Fire Wall of Vehicle, or some other metallic area.



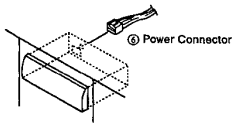
■ Using the Rubber Cushion (Optional)

(If there is an existig Rear Support Bracket on the Fire Wall of Car.)
Cover Mounting Bolt on the rear of the unit with Rubber Cushion (Optional), and mount it into the existing Rear Support Bracket.



Installation continued

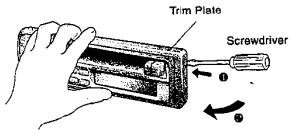
3. Plug the Power Connector ⑥.



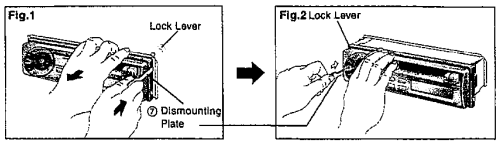
4. After installation, reconnect the negative (–) battery terminal.

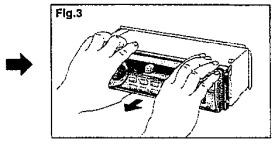
To Remove the Unit

a) Remove the trim plate with a screwdriver as show in the figure.



b) Pull out the unit while pushing two lock lever using Dismounting Plate ⑦ as follows. (Fig. 1,2)
c) Remove the unit pulling with both hands. (Fig. 3)





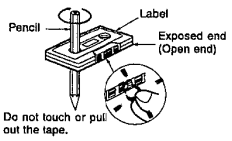
Note: Do not lose the dismounting Plate. It will be needed to remove the unit from the unit from the car's dashboard.

❑ Troubleshooting Tips

PROBLEM	POSSIBLE CAUSE	PROBABLE SOLUTION
Unit won't turn on.	Dead vehicle battery. Ignition not on. Bad power line connection. Fuse burned out.	Charge vehicle battery. Turn ignition to On or Accessory. Check connections. Replace fuse.
Radio has static.	Antenna not hokked up. Close to high power lines.	Hook up antenna. Move away from high power lines.
Radio memory buttons don't work.	Not holding buttons down long enough.	Press and hold buttons for more than 2 seconds.
Tape sound quality is poor.	Heads are dirty. Poor quality tape.	Clean heads. (Ask a service representative for advice.) Use better quality tape.
Tape Won't change programs.	Not pressing ▶▶ (FF) and ◀◀(REW) buttons at the same time.	Peress ▶▶ (FF) and ◀◀ (REW) buttons at the same time.

❑ Notes on Cassette Tapes

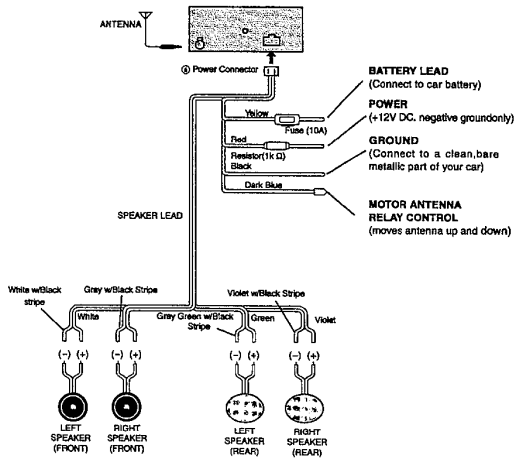
Tape Slack:
Use a pencil or similar object to take up the slack as shown. If a loose tape is used, this may result in the tape becoming tangled in the rotating parts of the unit.



Electrical Connection

Caution:
- To prevent damage to the unit, be sure to follow the connection diagram below.
- Remove the covering of the leads about 5 mm long from their ends before connecting.
- Do not insert the power connector into the unit until the wiring is completed.
- Be sure to insulate any exposed wires from a possible short-circuit from the car chassis. Bundle all cables and keep cable terminals free from touching any metal parts.

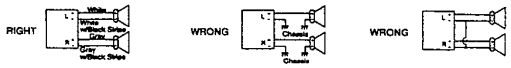
CQ-R121EW



Speaker Connections

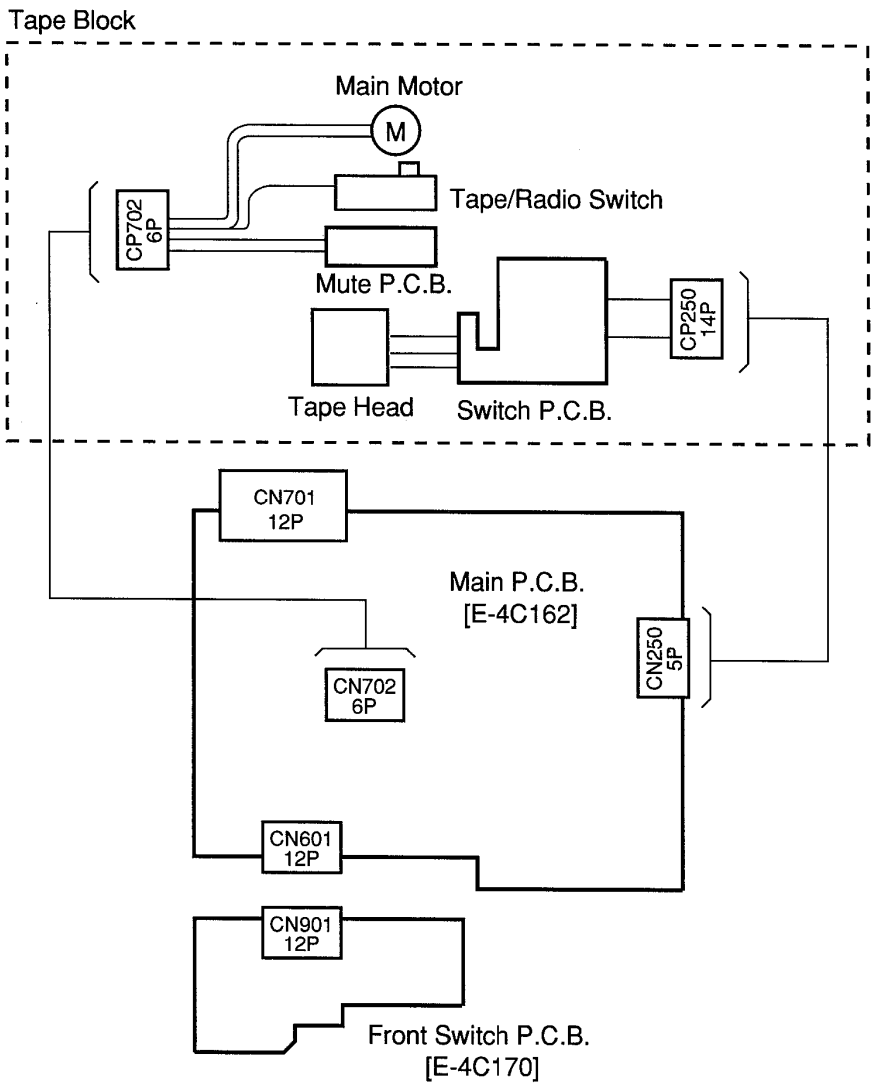
CAUTION:
1. Use ungrounded speakers only.
2. The speakers to be used with this unit should be able to handle more the 30 W of audio power. Use of speakers with samll input ratings can cause damage to the speakers.
3. The speaker impedance should be 4-8 ohms. If the impedance is too large or too small, it affects the output and may cause damage to the speakers or this unit.
4. Do not use 3-wire type speaker system having a common earth lead. Never connect the speaker cord to the body of the car. This unit uses the BTCL circuit, so each speaker should be connected separately using parallel vinyl insulated cords.
5. Follow the connection diagram below carefully. Failure to do so may cause damage to both unit and speakers.

• Unit will be damaged if speakers (Front, Rear) are not connected properly.

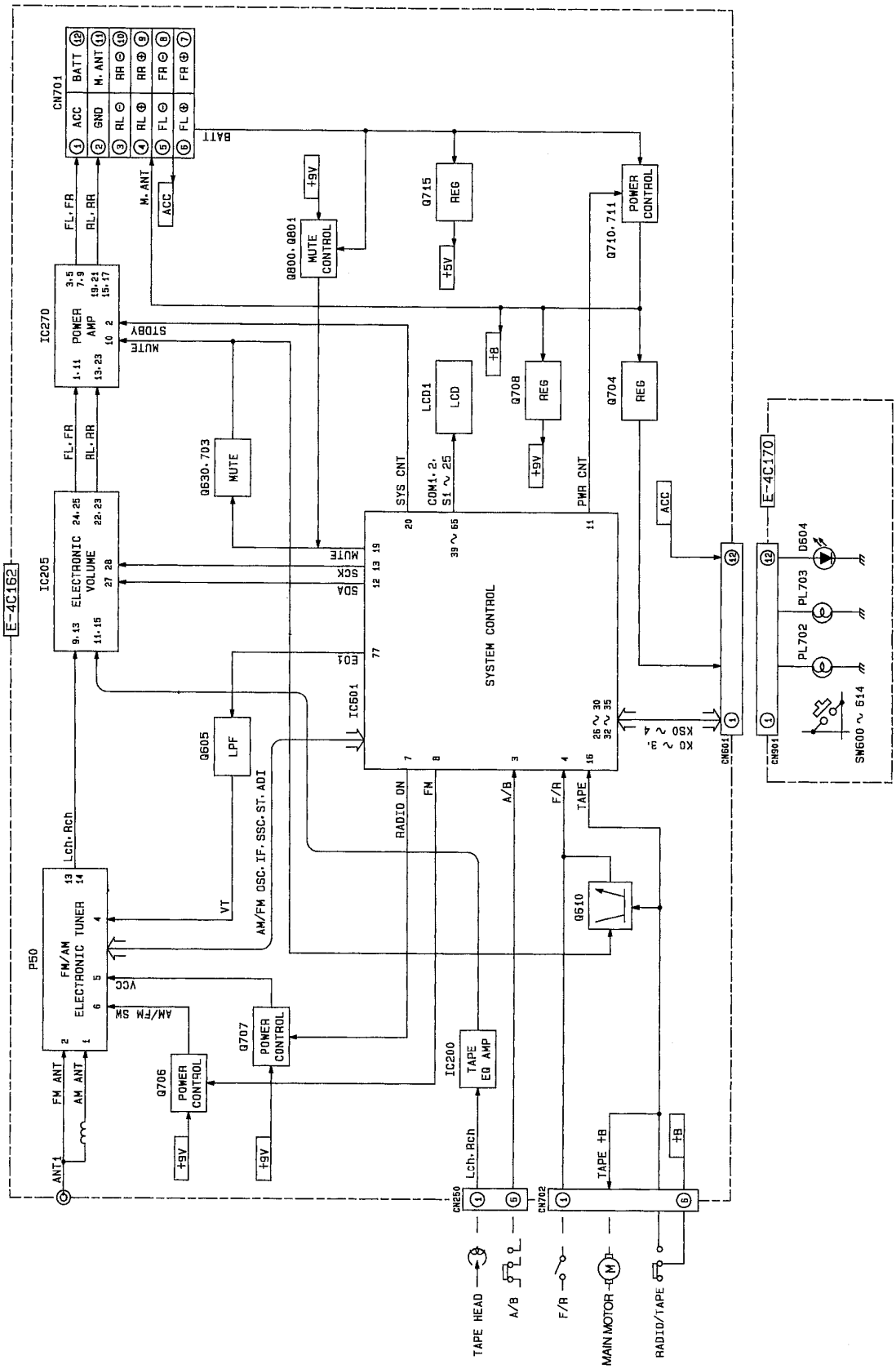


• Do not connect more than one speaker to one set of speaker leads.

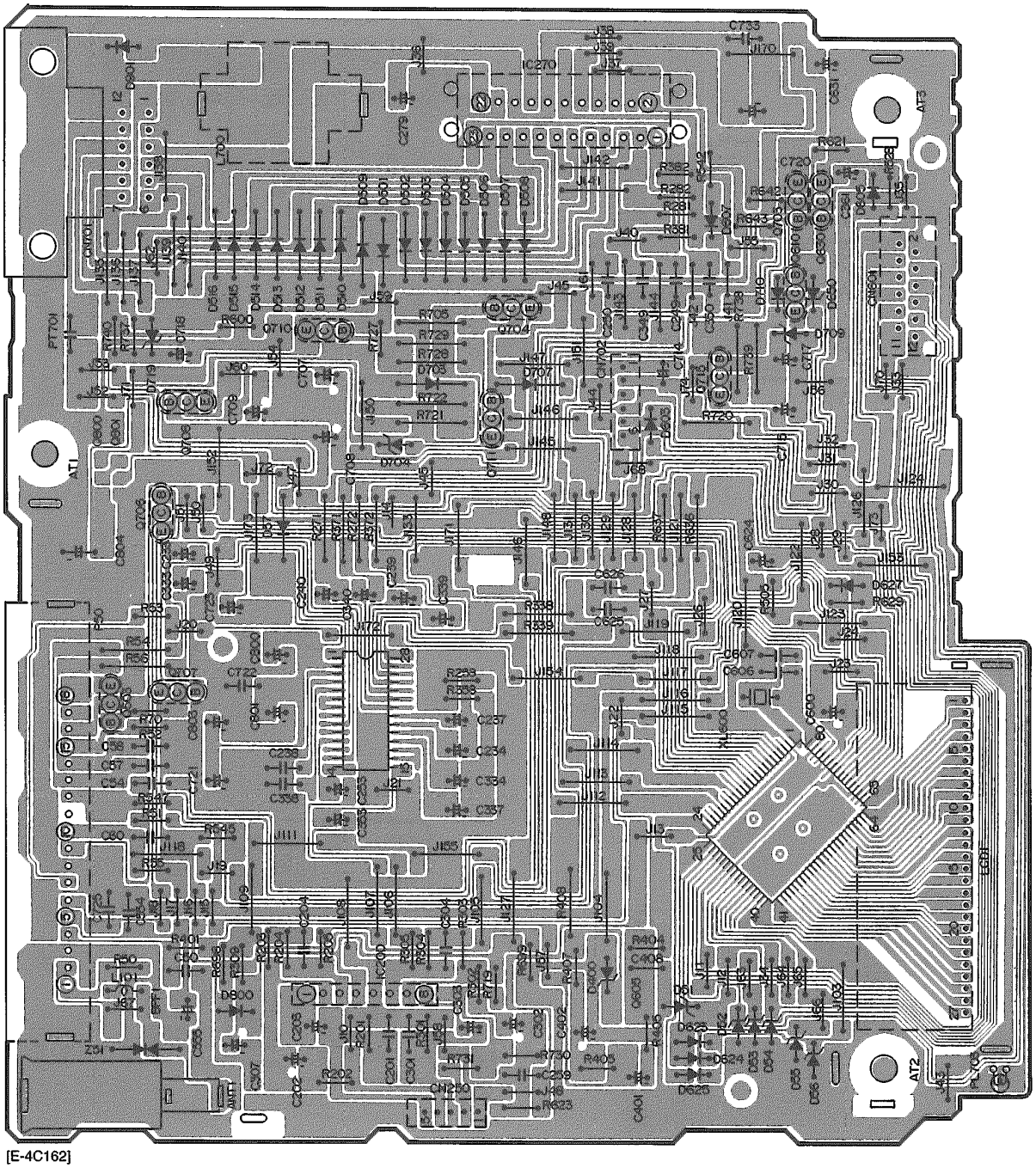
WIRING CONNECTION



BLOCK DIAGRAM MODEL CQ-R121EW

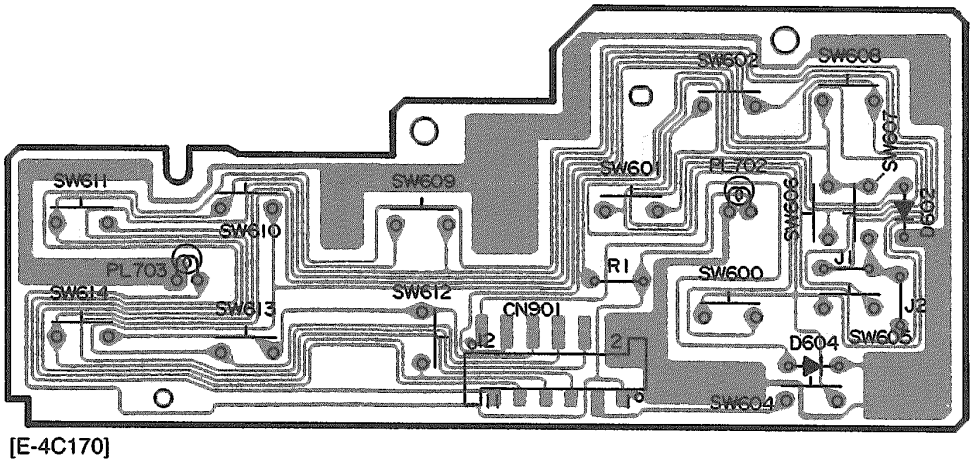


WIRING DIAGRAM (Main Block) MODEL CQ-R121EW



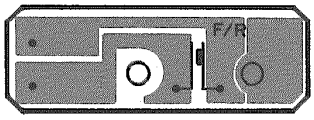
[E-4C162]

WIRING DIAGRAM (Front Switch Block) MODEL CQ-R121EW

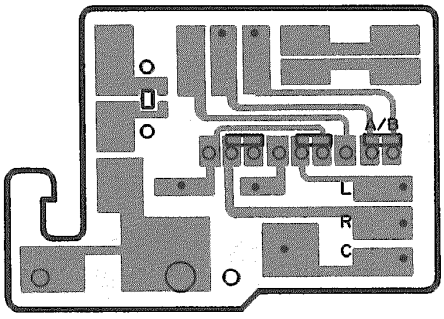


[E-4C170]

WIRING DIAGRAM (Tape Block) MODEL CQ-R121EW

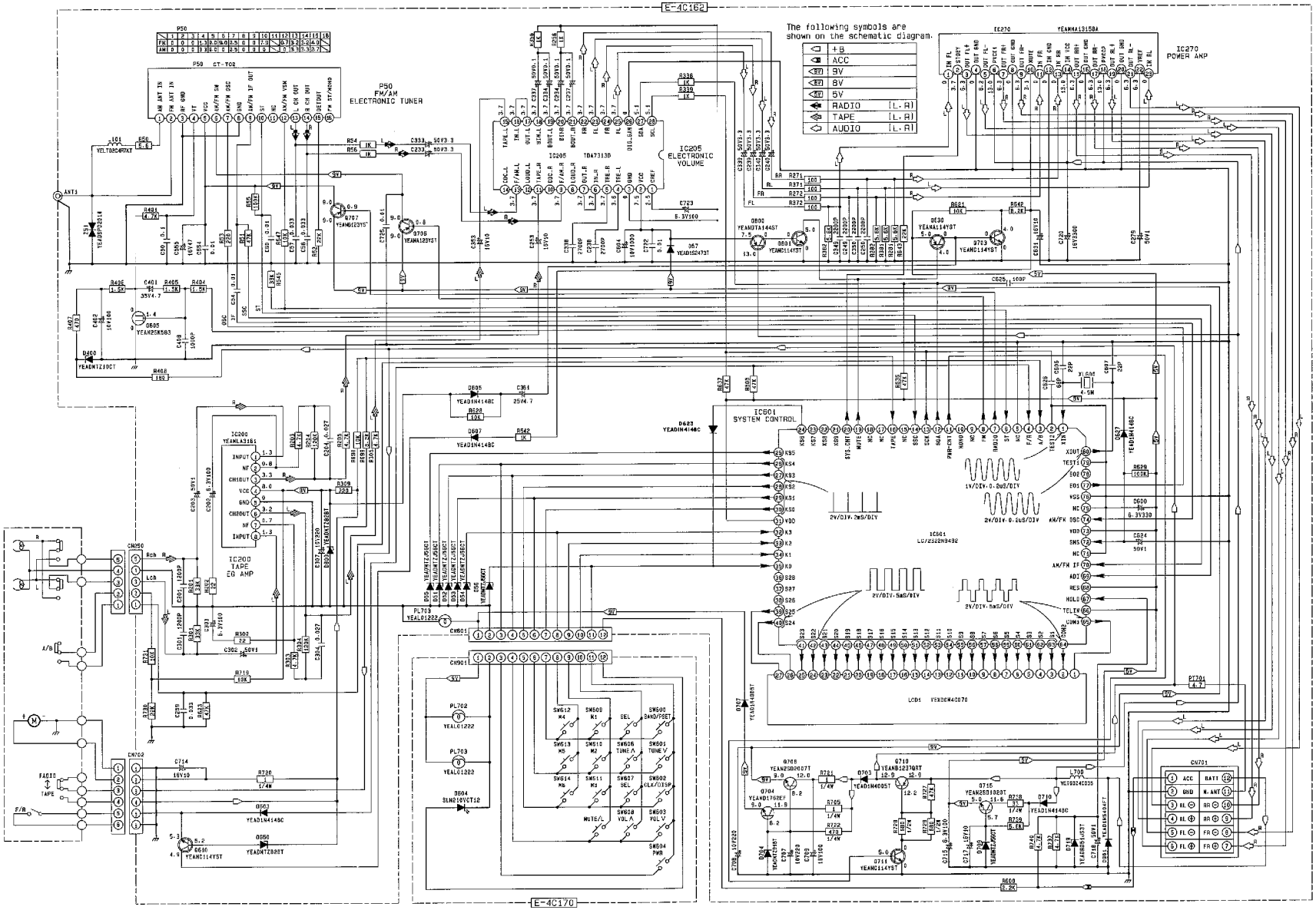


Mute P.C.B.



Switch P.C.B.

SCHEMATIC DIAGRAM MODEL CQ-R121EW



TERMINALS DESCRIPTION

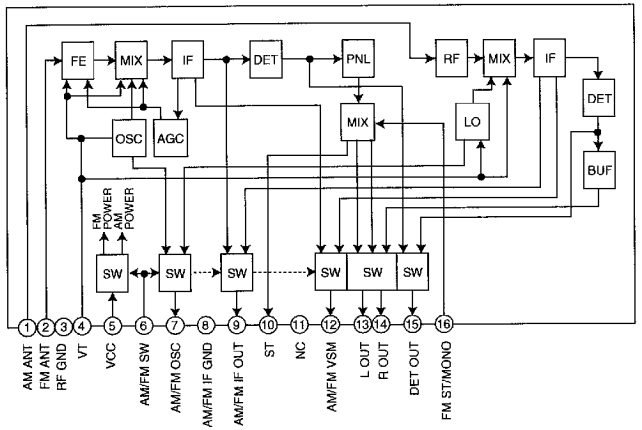
< Main Block>

■ IC601 LC7232N9492

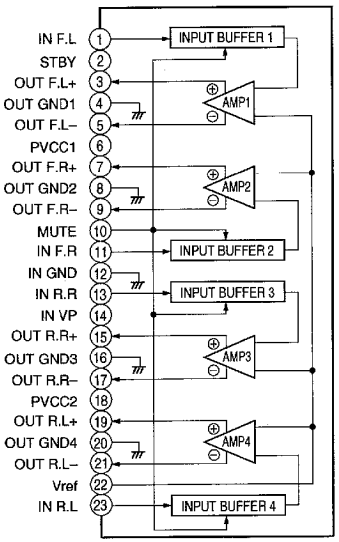
Pin No.	Name	Descripotion	I/O	Volt(V) FM	AM	TAPE
1	XIN	4.5MHz X'tal Oscillator	I	2.3	2.3	2.3
2	TEST2	(Connect to Ground)	—	0	0	0
3	A/B	Tape Direction H:A Side	I	0	0	4.0
4	F/R	Tape FF/REW Signal	I	0.4	0.5	5.0
5	NC	Ground	—	0	0	0
6	ST	Stereo Indicator Signal Input	I	0	7.6	0
7	R-ON	Radio On Signal	O	0	0.9	8.2
8	FM	Radio Band Select	O	0	8.1	8.2
9	NC	—	—	—	—	—
10	MONO (NC)	—	—	—	—	—
11	PWR-CNT	Power ON/OFF Output L:OFF H:ON	O	0	5.0	5.1
12	SDA	Electronic Volume Data Output	O	4.9	5.1	5.1
13	SCK	Electronic Volume Clock	O	4.9	5.1	5.1
14	SSC	Tuner Search Output	I	0	0	0
15	NC	—	—	—	—	—
16	TAPE	Tape Mode Detect	I	0	0	5.6
17	NC	—	—	—	—	—
18	NC	—	—	—	—	—
19	MUTE	Mute Output	O	5.0	5.1	5.1
20	SYS-CNT	System ON/OFF Output L:OFF H:ON	O	0	5.1	5.1
21	KS9 (NC)	—	—	—	—	—
22	KS8 (NC)	—	—	—	—	—
23	KS7 (NC)	—	—	—	—	—
24	KS6 (NC)	—	—	—	—	—
25	KS5	Key Scan Output	O	0	0	0
26	KS4	Key Scan Output	O	0	0	0
27	KS3	Key Scan Output	O	0	0	0
28	KS2	Key Scan Output	O	0	0	0
29	KS1	Key Scan Output	O	0	0	0
30	KS0	Key Scan Output	O	0	0	0
31	VDD	Connect to 5V	—	5.1	5.1	5.1
32	KI3	Key Scan Input	I	0	0	0
33	KI2	Key Scan Input	I	0	0	0
34	KI1	Key Scan Input	I	0	0	0
35	KI0	Key Scan Input	I	0	0	0
36	S28 (NC)	—	—	—	—	—
37	S27 (NC)	—	—	—	—	—
38	S26 (NC)	—	—	—	—	—
39	S25	LCD Segment Output	O	2.5	2.5	2.5
40	S24	LCD Segment Output	O	0	2.5	2.5
41~63	S23~S1	LCD Segment Output	O	2.5	2.5	2.5
64	COM2	LCD Common2	O	2.5	2.5	2.5
65	COM1	LCD Common1	O	2.5	2.5	2.5
66	TELIN	(Connect to 5V)	—	5.0	5.1	5.1
67	HOLD	ACC Detect	I	4.4	4.4	4.4
68	RES	(Connect to 5V)	—	5.0	5.1	5.1
69	ADI	FM/AM VSM	I	0	0	0
70	AM/FM IF	FM/AM IF Counter Input	I	0	2.4	0
71	NC	Ground	—	0	0	0
72	SNS	+5V Detect	I	5.0	5.0	5.0
73	VDD	Connect to 5V	—	5.0	5.0	5.1
74	AM/FM OSC	FM/AM Local OSC Input	I	0	2.5	0
75	NC	(Connect to Ground)	—	0	0	0
76	GND	Ground	—	0	0	0
77	PLL	PLL Phase Detector Output	O	3.7	1.3	1.3
78	NC	—	—	—	—	—
79	TEST1	(Connect to Ground)	—	0	0	0
80	XOUT	4.5MHz X'tal Oscillator	O	2.4	2.4	2.4

PACKAGE AND IC BLOCK DIAGRAM

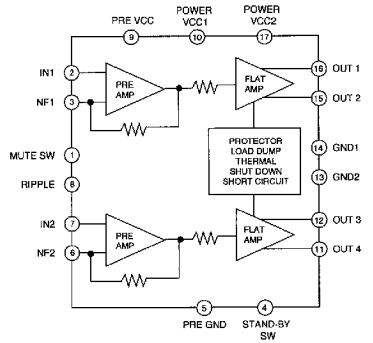
■ P50 CT-T02 [E-4C162]



■ IC270 YEAMHA13158A [E-4C162]



■ IC200 YEAMLA3161 [E-4C162]



1 Replacement Parts List

Note:

1. Be sure to make your orders of replacement parts according to this list.
2. Important safety notice: Components, identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. Location keys in the remarks column indicates the general location of the parts shown in the exploded drawing, as in a load map.
4. The marking (RTL) indicates that Retention Time is limited for this item. After the discontinuation of assembly in production, the item will continue to be availability is dependent on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.
5. "T" marks in remarks column are indicated supply parts of TAMACO.

1.1. IC's and Transistors

MAIN BLOCK [E-4C162]

Ref. No.	Part No.	Part Name & Description	Remarks
IC200	YEAMLA3161	IC	
IC205	YEAMTDA7313D	IC	
IC270	YEAMHA13158A	IC	T
IC601	LC72322N9492	IC	T
P50	CT-T02	AM/FM Tuner Pack	T
Q605	YEAN2SK583	Transistor	
Q610	YEANC114YST	Transistor	
Q630	YEANA114YST	Transistor	
Q703	YEANC114YST	Transistor	
Q704	YEAND1762EF	Transistor	
Q706	YENA123YST	Transistor	T
Q707	YEANB123YST	Transistor	
Q708	YEAN2SD2007	Transistor	
Q710	YEANB1237QRT	Transistor	
Q711	YEANC114YST	Transistor	
Q715	YEAN2SD1020T	Transistor	
Q800	YEANDTA144ST	Transistor	
Q801	YEANC114YST	Transistor	

1.2. Diodes

MAIN BLOCK [E-4C162]

Ref. No.	Part No.	Part Name & Description	Remarks
D51	YEADMTZJ56CT	Diode	T
D52	YEADMTZJ56CT	Diode	T
D53	YEADMTZJ56CT	Diode	T
D54	YEADMTZJ56CT	Diode	T
D55	YEADMTZJ56CT	Diode	T
D56	YEADMTZJ56CT	Diode	T
D57	YEAD1S2473T	Diode	T
D400	YEADMTZ10CT	Diode	T
D603	YEAD1N4148C	Diode	T
D605	YEAD1N4148C	Diode	T
D607	YEAD1N4148C	Diode	T
D623	YEAD1N4148C	Diode	T
D627	YEAD1N4148C	Diode	T
D703	YEAD1N4005T	Diode	T
D704	YEADMTZ91BT	Diode	T
D707	YEAD1N4005T	Diode	T
D710	YEAD1N4148C	Diode	T
D901	YEAD1N5404FT	Diode	T
D650	YEADMTZ82BT	Zener Diode	T
D709	YEADMTZJ56CT	Zener Diode	T
D719	YEADRD51JS3T	Zener Diode	
D800	YEADMTZ82BT	Zener Diode	T

SWITCH BLOCK [E-4C170]

Ref. No.	Part No.	Part Name & Description	Remarks
D604	SLN210VCT12	LED (Red)	T

1.3. Capacitors

MAIN BLOCK [E-4C162]

Ref. No.	Part No.	Part Name & Description	Remarks
C50	ECFL1C104KDY	Ceramic,0.1µF	T
C54	YEE05Y103N	Ceramic,0.01µF	
C57	ECFLD333KDY	Ceramic,0.033µF	T
C58	ECFLD333KDY	Ceramic,0.033µF	T
C60	YEE05Y103N	Ceramic,0.01µF	
C201	YEE05X122M	Ceramic,1200pF	
C202	ECEA0JKS101	Electrolytic,100µF 6.3WV	
C203	ECEA1HKS010	Electrolytic,1µF 50WV	
C204	ECFLD273KDY	Ceramic,0.027µF	T
C233	ECEA1HKS3R3	Electrolytic,3.3µF 50WV	
C234	ECEA1HKS0R1	Electrolytic,0.1µF 50WV	
C237	ECEA1HKS0R1	Electrolytic,0.1µF 50WV	
C238	YEE05X272M	Ceramic,2700pF	
C239	ECEA1HKS3R3	Electrolytic,3.3µF 50WV	
C240	ECEA1HKS3R3	Electrolytic,3.3µF 50WV	
C249	YEE05X222M	Ceramic,2200pF	
C250	YEE05X222M	Ceramic,2200pF	
C253	ECEA1CKS100I	Electrolytic,10µF 16WV	
C259	ECFLD333KDY	Ceramic,0.033µF	T
C279	ECEA1HKS010	Electrolytic,1µF 50WV	
C301	YEE05X122M	Ceramic,1200pF	
C302	ECEA1HKS010	Electrolytic,1µF 50WV	
C303	ECEA0JKS101	Electrolytic,100µF 6.3WV	
C304	ECFLD273KDY	Ceramic,0.027µF	T
C307	ECEA1AKS221I	Electrolytic,220µF 10WV	
C333	ECEA1HKS3R3	Electrolytic,3.3µF 50WV	
C334	ECEA1HKS0R1	Electrolytic,0.1µF 50WV	
C337	ECEA1HKS0R1	Electrolytic,0.1µF 50WV	
C338	YEE05X272M	Ceramic,2700pF	
C339	ECEA1HKS3R3	Electrolytic,3.3µF 50WV	
C340	ECEA1HKS3R3	Electrolytic,3.3µF 50WV	
C349	YEE05X222M	Ceramic,2200pF	
C350	YEE05X222M	Ceramic,2200pF	
C353	ECEA1CKS100I	Electrolytic,10µF 16WV	
C361	ECEA1EKS4R7I	Electrolytic,4.7µF 25WV	
C401	ECEA1VSN4R7I	Electrolytic,4.7µF 35WV	T
C402	ECEA1AKS101I	Electrolytic,100µF 10WV	
C408	YEU05B102K	Ceramic,1000pF	
C554	YEE05Y103N	Ceramic,0.01µF	
C555	ECEA1CKS470I	Electrolytic,47µF 16WV	
C600	ECEA0JKS331I	Electrolytic,330µF 6.3WV	
C606	YEU05SL220J	Ceramic,22pF	
C607	YEU05SL220J	Ceramic,22pF	
C624	ECEA1HKS010	Electrolytic,1µF 50WV	
C625	YEU05B101K	Ceramic,100pF	
C626	YEU05SL680J	Ceramic,68pF	
C631	ECEA1CKS100I	Electrolytic,10µF 16WV	
C707	ECEA1AKS221I	Electrolytic,220µF 10WV	
C708	ECEA1AKS221I	Electrolytic,220µF 10WV	
C709	ECEA1CKS101I	Electrolytic,100µF 16WV	
C714	ECEA1CKS100I	Electrolytic,10µF 16WV	
C715	ECEA0JKS101	Electrolytic,100µF 6.3WV	
C717	ECEA1CKS100I	Electrolytic,10µF 16WV	
C718	ECEA1HKS010	Electrolytic,1µF 50WV	
C720	ECEA1CU332C	Electrolytic,3.3kµF 16WV	T
C722	YEE05Y103N	Ceramic,0.01µF	
C723	ECEA0JKS101	Electrolytic,100µF 6.3WV	
C725	YEE05Y103N	Ceramic,0.01µF	
C804	ECEA1AU102BQ	Electrolytic,1000µF 10WV	T

1.4. Resistors

MAIN BLOCK [E-4C162]

Ref. No.	Part No.	Part Name & Description	Remarks
R50	ERDS2TJ5R6	Carbon,5.6Ω 1/4W	
R51	ERDS2TJ473	Carbon,47kΩ 1/4W	
R52	ERDS2TJ223	Carbon,22kΩ 1/4W	
R53	ERDS2TJ221	Carbon,220Ω 1/4W	
R54	ERD25TJ102	Carbon,1kΩ 1/4W	
R55	ERDS2TJ104	Carbon,100kΩ 1/4W	
R56	ERD25TJ102	Carbon,1kΩ 1/4W	
R201	ERDS2TJ333	Carbon,33kΩ 1/4W	
R202	ERDS2TJ220	Carbon,22Ω 1/4W	
R203	ERDS2TJ472	Carbon,4.7kΩ 1/4W	
R204	ERDS2TJ124	Carbon,120kΩ 1/4W	
R205	ERDS2TJ472	Carbon,4.7kΩ 1/4W	
R256	ERDS2TJ102	Carbon,1kΩ 1/4W	
R271	ERD25TJ101	Carbon,100Ω 1/4W	
R272	ERD25TJ101	Carbon,100Ω 1/4W	
R281	ERDS2TJ562	Carbon,5.6kΩ 1/4W	
R282	ERDS2TJ562	Carbon,5.6kΩ 1/4W	
R301	ERDS2TJ333	Carbon,33kΩ 1/4W	
R302	ERDS2TJ220	Carbon,22Ω 1/4W	
R303	ERDS2TJ472	Carbon,4.7kΩ 1/4W	
R304	ERDS2TJ124	Carbon,120kΩ 1/4W	
R305	ERDS2TJ472	Carbon,4.7kΩ 1/4W	
R309	ERDS2TJ221	Carbon,220Ω 1/4W	
R338	ERD25TJ102	Carbon,1kΩ 1/4W	
R339	ERD25TJ102	Carbon,1kΩ 1/4W	
R356	ERDS2TJ102	Carbon,1kΩ 1/4W	
R371	ERD25TJ101	Carbon,100Ω 1/4W	
R372	ERD25TJ101	Carbon,100Ω 1/4W	
R381	ERDS2TJ562	Carbon,5.6kΩ 1/4W	
R382	ERDS2TJ562	Carbon,5.6kΩ 1/4W	
R401	ERDS2TJ472	Carbon,4.7kΩ 1/4W	
R404	ERDS2TJ152	Carbon,1.5kΩ 1/4W	
R405	ERDS2TJ152	Carbon,1.5kΩ 1/4W	
R406	ERDS2TJ152	Carbon,1.5kΩ 1/4W	
R407	ERDS2TJ471	Carbon,470Ω 1/4W	
R408	ERD25TJ181	Carbon,180Ω 1/4W	
R505	ERDS2TJ473	Carbon,47kΩ 1/4W	
R542	ERDS2TJ102	Carbon,1kΩ 1/4W	
R545	ERDS2TJ333	Carbon,33kΩ 1/4W	
R547	ERDS2TJ103	Carbon,10kΩ 1/4W	
R600	ERDS2TJ222	Carbon,2.2kΩ 1/4W	
R621	ERDS2TJ103	Carbon,10kΩ 1/4W	
R623	ERDS2TJ473	Carbon,47kΩ 1/4W	
R628	ERDS2TJ103	Carbon,10kΩ 1/4W	
R629	ERDS2TJ104	Carbon,100kΩ 1/4W	
R636	ERD25TJ473	Carbon,47kΩ 1/4W	
R637	ERD25TJ473	Carbon,47kΩ 1/4W	
R642	ERDS2TJ822	Carbon,8.2kΩ 1/4W	
R643	ERDS2TJ223	Carbon,22kΩ 1/4W	
R698	ERDS2TJ103	Carbon,10kΩ 1/4W	
R699	ERDS2TJ822	Carbon,8.2kΩ 1/4W	
R705	ERD25FJ1R0	Carbon,1Ω 1/4W	
R719	ERDS2TJ103	Carbon,10kΩ 1/4W	
R720	ERD25FJ1R0	Carbon,1Ω 1/4W	
R721	ERD25FJ1R0	Carbon,1Ω 1/4W	
R722	ERDS2TJ471	Carbon,470Ω 1/4W	
R727	ERDS2TJ473	Carbon,47kΩ 1/4W	
R728	ERD25TJ681	Carbon,680Ω 1/4W	
R729	ERD25TJ681	Carbon,680Ω 1/4W	
R730	ERDS2TJ223	Carbon,22kΩ 1/4W	
R731	ERDS2TJ103	Carbon,10kΩ 1/4W	
R737	ERDS2TJ472	Carbon,4.7kΩ 1/4W	
R738	ERD25TJ330	Carbon,33Ω 1/4W	
R739	ERD25TJ562	Carbon,5.6kΩ 1/4W	
R740	ERDS2TJ472	Carbon,4.7kΩ 1/4W	

1.5. Connectors

MAIN BLOCK [E-4C162]

Ref. No.	Part No.	Part Name & Description	Remarks
CN601	YEAETKCF12PS	Connector	
CN701	YEAE4CC0N005	Connector	T
CN250	YEAE2011P05	Connector	
CN702	YEAE2011P06	Connector	

SWITCH BLOCK [E-4C170]

Ref. No.	Part No.	Part Name & Description	Remarks
CN901	YEAETKCF12XS	Connector, 12P	

1.6. Electric Parts

SWITCHES

Ref. No.	Part No.	Part Name & Description	Remarks
SW600	YEAS094C020	Switch	T
SW601	YEAS094C020	Switch	T
SW602	YEAS094C020	Switch	T
SW603	EVQPJJ04T	Switch	
SW604	EVQPJH05K	Switch	
SW606	EVQPJJ04T	Switch	
SW607	EVQPJH05K	Switch	
SW608	YEAS094C020	Switch	T
SW609	YEAS094C020	Switch	T
SW610	YEAS094C020	Switch	T
SW611	YEAS094C020	Switch	T
SW612	YEAS094C020	Switch	T
SW613	YEAS094C020	Switch	T
SW614	YEAS094C020	Switch	T

CRYSTAL

Ref. No.	Part No.	Part Name & Description	Remarks
XL600	YEXL4C45TT	Crystal	T

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
J23	YELT02C101KT	Coil	
L101	YELT02C4R7KT	Coil	
L700	YETQ024C035	Choke Coil	T

LCD

Ref. No.	Part No.	Part Name & Description	Remarks
LCD1	YEXDCM4C070	LCD	T

POSISTOR

Ref. No.	Part No.	Part Name & Description	Remarks
PT701	YERT7AR4R7MT	Posistor	

MAIN BLOCK [E-4C162]

Ref. No.	Part No.	Part Name & Description	Remarks
PL703	YEAL01222	Lamp	

SWITCH BLOCK [E-4C170]

Ref. No.	Part No.	Part Name & Description	Remarks
PL702	YEAL01222	Lamp	
PL703	YEAL01222	Lamp	

1.7. Accessories

PRINTING

Ref. No.	Part No.	Part Name & Description	Remarks
	YFM284C292ZA	Operating Instructions	T

INSTALLATION PARTS

Ref. No.	Part No.	Part Name & Description	Remarks
	YAJ024C065ZA	Power Cord Ass'y	T
	ZZBISR115	Screw Kit and Dismounting Pin	T

Ref. No.	Part No.	Part Name & Description	Remarks
	YEFX0214198	Mounting Collar	
	YEFG044C002	Rear Support Strap	T

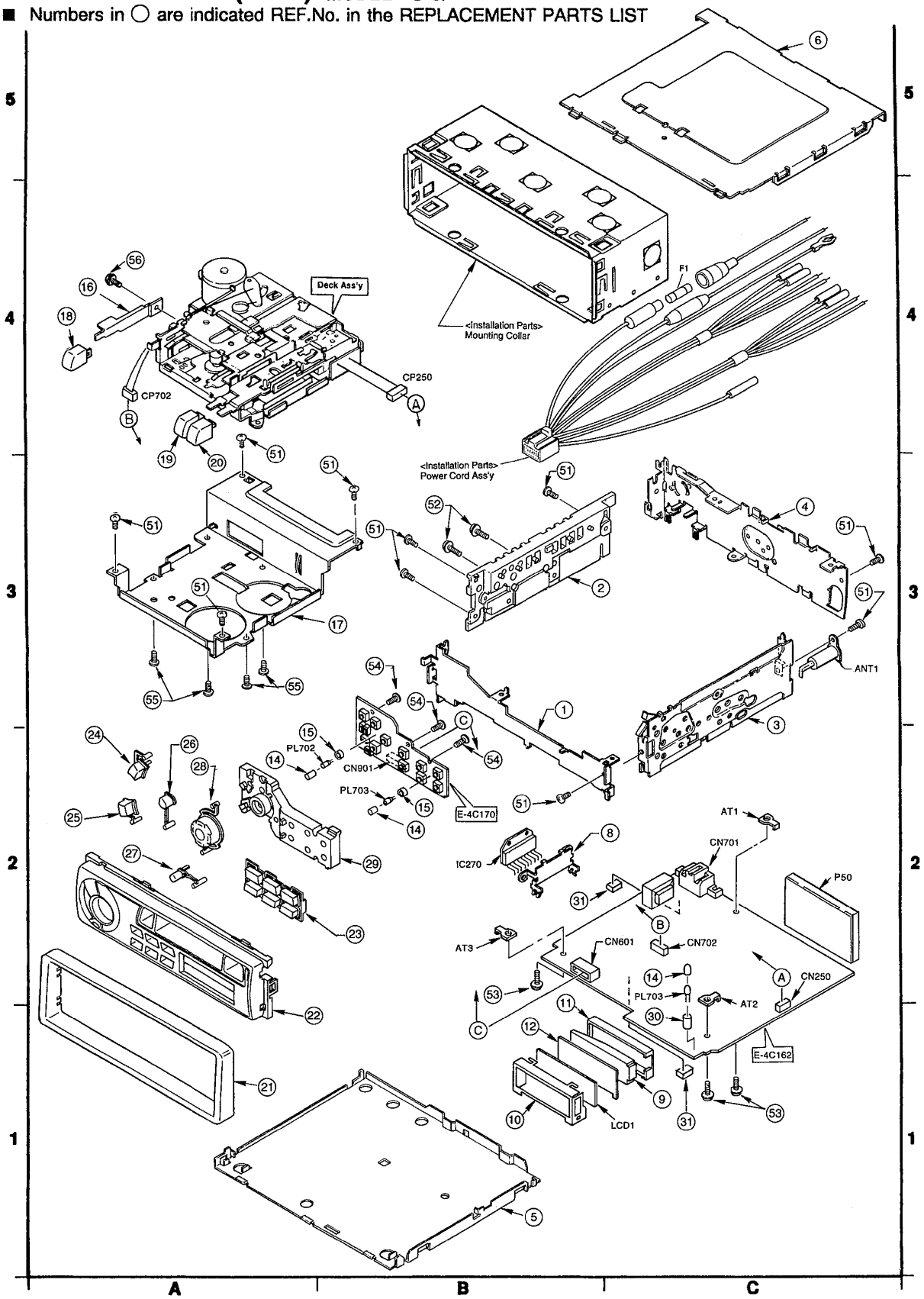
1.8. Mechanical Parts

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
F1 ⚠	XBB1F100NS5	Fuse, 10A	
ANT1	YAA104C700ZA	Antenna Jack	T
Z51	YEADSPD201M	Surge Protector	T
AT1	YEAT03420	Terminal	
AT2	YEAT03420	Terminal	
AT3	YEAT03420	Terminal	
1	YFA074C034ZA	Front Plate	T(3-B)
2	YFF014C032XA	Heat Sink	T(3-B)
3	YFA094C080ZA	Right Plate Ass'y	T(3-C)
4	YFA084C021ZA	Rear Plate	T(3-C)
5	YFA045C026YF	Under Cover	T(1-B)
6	YFA034C031ZC	Upper Cover	T(5-C)
8	FX0214C172XA	IC Bracket	T(2-C)
9	FX0014C048ZA	Panel Light (LCD)	T(1-C)
10	FX0214C214ZA	LCD Bracket	T(1-B)
11	YFX184C014ZA	LCD Holder	T(2-B)
12	YFV024C040ZA	Sheet	T(1-B)
14	YEFR04134	Lamp Dorm	
15	YEFK044C007	Lamp Gum	T(2-A) (2-B)
16	YFX464C010ZA	Eject Lever	T(4-A)
17	FX0214C188YA	Deck Bracket	T(3-B)
18	YFE134C236ZA	Button (EJECT)	T(4-A)
19	YFE134C238ZA	Button (REW)	T(3-A)
20	YFE134C237ZA	Button (FF)	T(3-A)
21	YFC054C046ZA	Trim Plate	T(1-A)
22	YFC024C439ZA	Escutcheon Ass'y	T(1-A)
23	YFE134C239ZA	Button (1-6)	T(2-B)
24	YFE134C249ZA	Button (UP)	T(2-A)
25	YFE134C250ZA	Button (DOWN)	T(2-A)
26	YFE134C252ZA	Button (SEL)	T(2-A)
27	YFE134C242ZA	Button (PWR)	T(2-A)
28	YFE134C248ZA	Button (CLOCK/BAND)	T(2-A)
29	FX0014C049ZA	Panel Light (PRESET)	T(2-B)
30	YFK044C012ZA	Lamp Holder	T(1-C)
31	YFS014C028ZA	Pad	T(1-C) (2-B)
51	XTB3+6FFXS	Screw	
52	YEJT034C019	Screw(Cup Tight),3mm*12mm	T(3-B)
53	YEJT034C001	Screw	T(1-C) (2-B)
54	XTN2+6C	Screw	T(2-B) (3-B)
55	XSB26+4FX	Screw	(3-A)
56	YEJT034C007	Screw	T(4-A)

EXPLODED VIEW (UNIT) MODEL CQ-R121EW

■ Numbers in ○ are indicated REF.No. in the REPLACEMENT PARTS LIST



2 Tape Player Parts List

Note:

1. Be sure to make your orders of replacement parts according to this list.
2. Important safety notice: Components, identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. Location keys in the remarks column indicates the general location of the parts shown in the exploded drawing, as in a load map.
4. "T" marks in remarks column are indicated supply parts of TAMACO.

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
1	X0036-1001	Main Chassis Ass'y	T(2-B)
2	X0036-6082	Head Plate Ass'y	T(3-B)
3	X0036-1009	Reel Base Ass'y	T(1-A)
4	X0036-1010	FR Changing Arm Ass'y	T(3-B)
6	X0036-1019	Eject Cam Lock Ass'y	T(3-A)
7	X0036-6077	Lever Bracket Ass'y	T(3-C)
10	X0036-1025	FR Arm (B) Ass'y	T(1-B)
11	X0138-2006	CM Bracket Ass'y	T(3-B)
12	10036-60011	Flywheel Ass'y (F)	T(1-C)
13	10138-6002	Pinch Arm (R) Ass'y	T(2-B)
14	10138-6003	Pinch Arm (F) Ass'y	T(2-C)
15	X0036-6080	Reel Spindle Ass'y	T(1-A) (1-B)
16	10036-60010	Flywheel Ass'y (R)	T(1-C)
19	10138-1010	Cassette Holder	T(3-A)
20	10036-1006	Eject Cam	T(2-A)
21	10036-1046	Eject Lever (S)	T(2-A)
22	10138-1002	Cassette Hanger	T(3-A)
23	10036-1015	SPG Support Plate	T(4-B)
24	10036-1016	Conversion Lever	T(1-B)
25	10138-1006	Adjuster Shim	T(3-B)
26	10036-1018	Center Plate	T(4-A)
27	10036-1013	Lock Arm	T(3-C)
28	10036-1023	Change Lever (B)	T(3-C)
29	10036-1026	FR Arm (B)	T(1-B)
30	10036-1004	FF Lever (AT)	T(4-C)
31	10036-1005	Rew Lever (AT)	T(3-C)
35	10036-2001	Idle Gear	T(2-A)
37	10036-20040	Reduction Gear (A)	T(2-A)
38	10036-2003	Reduction Gear (B)	T(2-A)
39	10036-20050	Pulley Gear	T(2-B)
40	10038-2018	Tape Guide	T(3-B)
41	10036-2007	Ratchet	T(2-A)
42	10036-2008	FF Arm	T(1-B)
43	10036-2009	Sensor Arm	T(2-A)
44	10036-2010	Selector Gear	T(2-A)
45	10138-20053	Adjuster Arm	T(4-B)
46	10138-2004	Adjuster Link	T(3-B)
47	10038-2014	Gear Lock Arm	T(2-A)
48	10036-2014	Detector Gear	T(1-A)
49	X0036-2015	TU Gear Arm Ass'y	T(3-C)
50	X0136-2001	Detector Cam Ass'y	T(1-A) (1-B)
51	10038-2034	Mute Arm (N)	T(3-A)
52	10058-2004	Tape Hooker	T(3-A)
53	10058-20215	Idle Pulley (A)	T(2-B)
57	10036-3024	HP Roller (B)	T(3-B)
58	10036-3032	FF Roller (A)	T(4-B)
59	10036-3018	Collar (Selector Gear)	T(2-A)
60	10036-3002	HP Roller (A)	T(3-B)
62	10038-3012	Program Roller	T(3-C)
63	10038-3015	Mute Arm Collar	T(3-A)
64	10036-4001	FF/Rew Lever SPG	T(3-C) (4-C)
65	10036-4022	Lock Lever SPG (A)	T(3-C)
66	10036-4003	Gear Lock Arm SPG	T(2-A)
67	10036-4004	Eject Lever SPG	T(2-A)
68	10036-4005	Eject CamSPG	T(2-A)
69	10036-4006	Head Plate SPG	T(3-B)
70	10036-4007	Eject Cam Lock SPG	T(4-A)
71	10036-4008	Program Arm SPG	T(3-C)
72	10036-4010	Adjuster Arm SPG (A)	T(4-B)
73	10036-4011	Adjuster Arm SPG (B)	T(4-B)
74	10036-4012	Pinch Arm SPG (F)	T(2-C)
75	10036-4013	Pinch Arm SPG (R)	T(2-B)
76	10038-4014	Ratchet SPG	T(2-A)
77	10036-4015	Dash SPG	T(1-A)
78	10058-4023	Tambler SPG (B)	T(4-A)
79	10036-4017	Changing Arm SPG	T(3-C)
80	10036-4018	Earth SPG (R)	T(2-B)
82	10036-4032	Back Tension SPG (MH)	T(1-A) (1-B)
85	10036-5018	Sub Belt (C)	T(2-B)
86	10138-5001	Selector Link	T(3-C)
87	10036-5004	Main Belt	T(1-C)
89	10036-5006	Return Link	T(4-A)
92	X0036-6075	Motor Ass'y	T(4-B)
94	10036-7001	SW PWB	T(2-C)
95	10036-7002	Wire (A) Black 60mm	T(2-C)
96	10036-7003	Wire (B) Red 60mm	T(2-C)
97	10036-7004	Wire (C) Yellow 55mm	T(2-C)
98	10036-7005	Head	T(4-B)
99	10036-7034	Power SW	T(2-B)
100	10036-7007	Slide SW	T(2-C)
101	10138-7002	Mute PWB	T(2-C)
102	10138-7087	Mute SW	T(2-B)
105	21711-504016	E-Ring 1.5mm	T
106	21711-603296	E-Ring 1.6×3.2	T(3-B)
107	21712-005016	E-Ring 2mm	T
108	21712-506016	E-Ring 2.5mm	T
109	21331-7030C2	Machine Screw S-Type Plain #3 M1.7×3	T(3-B)
111	21812-0030D2	PSW-S 1.2×3.0×t0.25	T
112	10036-5019	Reel PSW	T(1-A) (1-B)
113	21821-0032D1	PSW	T(3-B)
114	21331-7040C2	+Machine Screw S-Type Plain #3 M1.7×4	T(3-C)
116	21331-7060C2	+Machine Screw S-Type Plain #3 M1.7×6	T(2-B)
117	21382-0030C2	+Machine Screw B-Type Plain #3 M2×3	T
118	21362-0040F2	+Machine Screw B-Type Flat #1 M2×4	T(3-A)
119	21332-0040C1	+Machine Screw S-Type Plain #3 M2×4	T(3-C)
120	21032-0070C2	+Machine Screw Plain #3 M2×7	T(3-B)
121	21032-0025C2	+Machine Screw Plain #3 M2×2.5	T(3-B)
122	21012-0040C2	+Machine Screw Plain #1 M2×4	T(4-B)
123	21012-0030F2	+Machine Screw Flat #1 M2×3	T(2-C)
124	10138-5002	Azimuth Screw Plain #1 P0.25 M2×5	T(4-B)
125	10036-5005	Eject Hook Screw M2×5	T(2-B)
126	10136-5001	LMW (Rew) 2.1×3.5×t0.05	T(1-A) (1-B)
127	10036-5024	PSW (Reel)B 1.5×3.2×t0.25	T

EXPLODED VIEW (Tape Deck) MODEL CQ-R121EW

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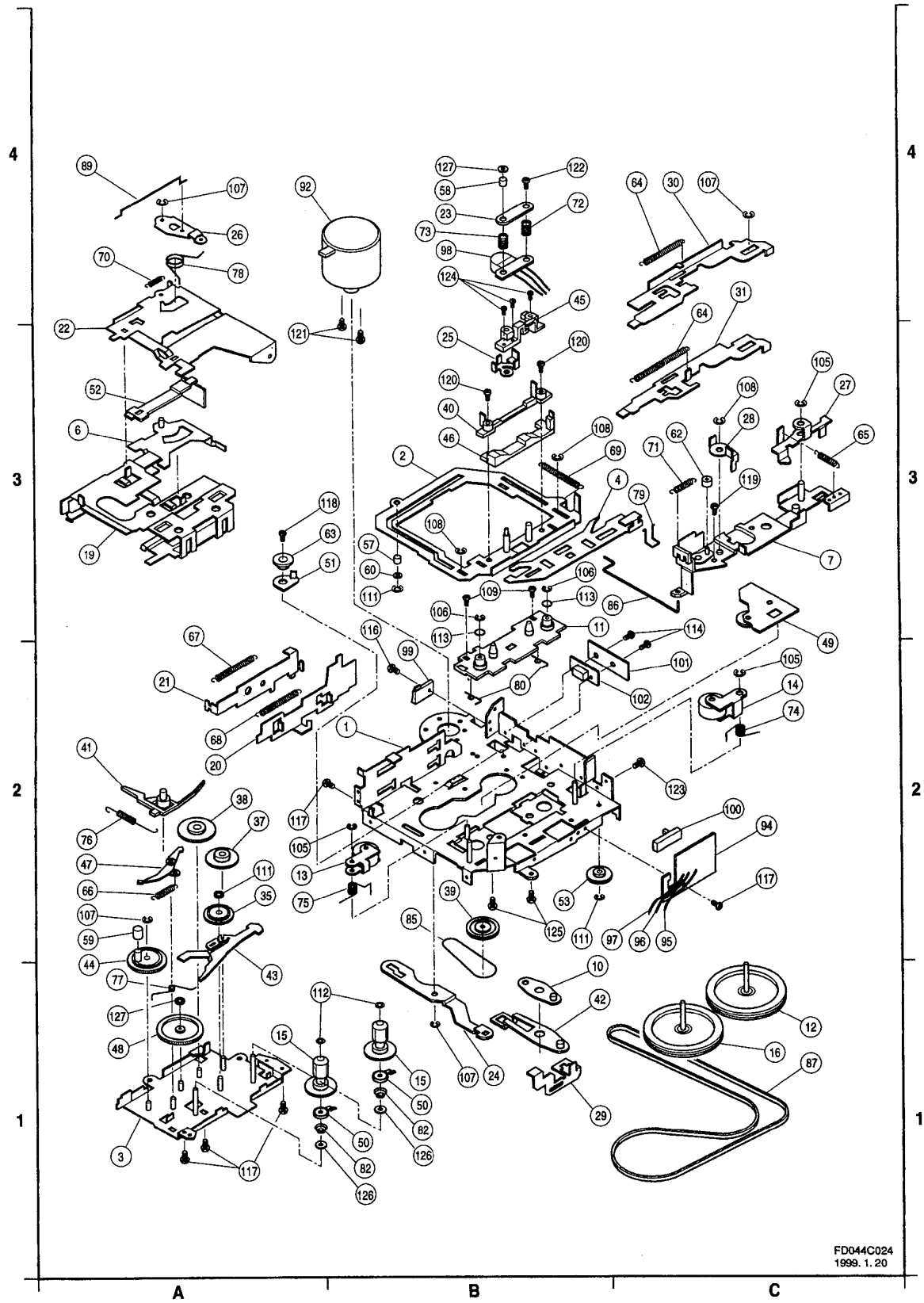

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